

member provided in the vicinity of the slot electrode within a predetermined range of temperatures; and

a process chamber into which the microwave exiting the slot electrode is introduced so that a plasma is generated by the microwave within the process chamber.

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2. (Amended) The microwave plasma processing apparatus as claimed in claim 1, wherein the first temperature control device controls the temperature of the slot electrode to be in a predetermined temperature range so as to substantially eliminate influence of water released from components in the process chamber on a substrate being processed.
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See the attached Appendix for the changes made to effect the above claims.

Please add the following new claims:

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- 18. (New) The microwave plasma processing apparatus as claimed in claim 1, wherein the first temperature control device comprises:
a control unit;
a temperature sensor; and
a heater.
19. (New) The microwave plasma processing apparatus as claimed in claim 18, wherein the temperature sensor includes at least one of a platinum resistor, a thermistor, an infrared temperature sensor, and a thermocouple.
20. (New) The microwave plasma processing apparatus as claimed in claim 18, wherein the temperature sensor is configured to sense a temperature of at least one of the wavelength reducing member and the slot electrode.
21. (New) The microwave plasma processing apparatus as claimed in claim 18, wherein the heater comprises a heating wire wound on a fluid supply tube connected to a fluid passage in a temperature control plate to supply a fluid to the temperature control plate.

22. (New) The microwave plasma processing apparatus as claimed in claim 18,
wherein the control unit controls an electric current supplied to the heater based on
temperature information output from the temperature sensor.
23. (New) The microwave plasma processing apparatus as claimed in claim 1,
wherein the first temperature control device includes a stop valve and a mass flow
controller configured and arranged to control an amount of fluid.
24. (New) The microwave plasma processing apparatus as claimed in claim 23,
wherein the first temperature control device operates the mass flow controller and the
stop valve so as to supply the fluid from a fluid source to a temperature control plate.
25. (New) The microwave plasma processing apparatus as claimed in claim 24,
wherein the first temperature control device simultaneously controls both the
temperature of the wavelength reducing member and the temperature of the slot electrode by
controlling an amount of fluid flowing through the temperature control plate. --
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